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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/663,490	09/18/2000	William L. Luken	YOR919990545	4473

7590 05/06/2004

Anne Vachon Dougherty
3173 Cedar Road
Yorktown Heights, NY 10598

EXAMINER

DINH, KHANH Q

ART UNIT	PAPER NUMBER
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2151

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/663,490

Applicant(s)

LUKEN ET AL.

Examiner

Khanh Dinh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This is in response to the Amendment filed on 12/18/2004 (paper # 3). Claims 1-28 presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 4-11, 13-17, 19, 21-22 and 24-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Dinakar et al., US pat. No.6,359,900.

As to claims 1 and 10, Dinakar discloses a method for scheduling the delivery of data packets representing one or more media data tracks (multimedia objects), said method allowing the data packets to be delivered from a server (26 fig.1) to a client (virtual requesters 15-20 of fig.1) with a given bandwidth so as to minimize the initial delay required for the client to present the data without interruption, said method including the steps of:

creating a list of virtual data packets (multimedia packets from "virtual" requesters 15-20 of fig.1) representative of all data packets to be scheduled for delivery from the server to the client (see fig.1, abstract, col.4 lines 40-67 and col.5 lines 1-50).

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calculating a delivery deadline (providing inter-packet wait times that are inversely proportional to the amount of requested bandwidth to ensure smooth audio and video presentation) for each virtual data packet based on the communications bandwidth (bandwidths associated with each request) from the server to the client (see col.4 lines 40-67 and col.5 line 51 to col.6 line 48).

sorting the list of virtual data packets based on the delivery deadlines calculated for each virtual data packet, to provide a sorted list and delivering the data packets in accordance with the sorted list (tracking the total amount associated with each slot in each request and calculating the "predetermined range" and "APPOINTED QUEUE" for each slot, fig.2, see col.6 line 50 to col.7 line 55).

As to claim 2, Dinakar discloses resolving temporal collisions between virtual data packets (using the Request Scheduler to assign the order to requesters, see fig.4, col.7 line 16 to col.8 line 34 and col.10 lines 12-46).

As to claim 4, Dinakar discloses comparing each virtual data packet in the sorted list of virtual data packets to the preceding member of this list, starting with the member of this list having the latest delivery deadline and ending with the member of this list having the earliest delivery deadline (using the request Scheduler to provide the processing order to requesters, see figs. 4, 5, col.7 line 38 to col.8 line 65 and col.10 lines 12-63).

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As to claim 5, Dinakar discloses removing temporal gaps between successive virtual data packets (see fig.10, col.7 line 16 to col.8 line 34 and col.10 lines 12-66).

As to claim 6, Dinakar discloses comparing each virtual data packet in the sorted list of virtual data packets to the next successive member of this list, starting with a first member of the list having the earliest delivery deadline and ending with a last member of this list having the latest delivery deadline (using the Request Scheduler to assign the order to requesters, see fig.4, col.7 line 16 to col.8 line 34 and col.10 lines 12-46).

As to claim 7, Dinakar discloses determining optimal client buffer size based on the communications bandwidth and communicating optimal client buffer size information to the client (processing service orders in a way to prevent the admission of more requesters to the system than the channel can handle, see figs.2, 3, col.6 line 50 to col.7 line 55 and col.8 lines 10-65).

As to claim 8, Dinakar discloses determining a new communications bandwidth, calculating a revised sorted list based on the new communications bandwidth, replacing the sorted list with the revised sorted list and continuing delivery of packets according to the revised sorted list (see fig.4, col.7 line 16 to col.8 line 65 and col.10 lines 12-46).

As to claim 9, Dinakar discloses determining optimal client buffer size based on the new communications bandwidth and communicating the optimal client buffer size to the

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client (determining the admission of a Requester based on communications bandwidth, see figs.6, 7, col.8 line 10 to col.9 line 65 and ocl.10 lines 12-46).

Claims 11 and 13-15 are rejected for the same reasons set forth in claims 2 and 4-6 respectively.

Claim 16 is rejected for the same reasons set forth in claim 1. As to the added limitations, Dinakar discloses calculating the initial delay based on the size of the first data packet (bandwidth size) on said sorted list and delivering non-sequential data packets based on said sort list (processing data packets including video traffic, requires substantial amounts of bandwidth that provides a quantity of the data, multimedia transmissions in which must occur in a timely manner such that there are minimal delays between packets, see figs.1, 4, col.4 line 40 to col.5 line 65 and col.7 lines 16-55).

Claims 17 and 19 are rejected for the same reasons set forth in claims 2 and 4 respectively.

Claim 21 is rejected for the same reasons set forth in claim 1. As to the added limitations, Dinakar discloses determining the maximum amount of data to be stored in the buffer as a function of time based the size of the virtual data packets (using bandwidth size for data packets to provide Quality of Service guarantees for minimal

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delay between packets) and the delivery schedule from said sorted list and identifying said minimum buffer size based on maximum amount of data to be stored (assigning slots to appropriate requesters, see figs. 4, 5, col.9 line 46 to col.10 line 48 and col.13 line 3 to col.14 line 55).

Claims 22 and 24-26 are rejected for the same reasons set forth in claims 2 and 4-6 respectively.

Claim 27 is rejected for the same reasons set forth in claim 1. As to the added limitations, Dinakar discloses at least one media database (28 fig.1) for storing multimedia data packets; at least one media delivery component for delivering data packets and at least one ordering component for ordering the multimedia data into data packages for delivery (see figs.1, 2, col.5 lines 1-50 and col.6 line 50 to col.7 line 7 line 55).

Claim 28 is rejected for the same reasons set forth in claim 1

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 3, 12, 18, 20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinakar et al., US pat. No.6,359,900 in view of Packer, US pat. No.5,802,106.

Dinakar's teachings still applied as in item 4 above. Dinakar does not specifically disclose using $t(\text{deadline}) = t(\text{start}) - (\text{packet size})/(\text{bandwidth})$. However, Packer discloses $t(\text{deadline}) = t(\text{start}) - (\text{packet size})/(\text{bandwidth})$ (see fig.2 and col.4 line 39 to col.5 line 55 and col.6 line 44 to col.8 line 12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement Packer's teachings into the computer system of Dinakar discloses to detect data flow rate capacity because it would have provided important strategic decisions about the nature and the speed of the future connections and used to set the communication link parameters (see Packer's col.6 lines 26-60).

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As to claim 20, Dinakar discloses the minimum initial delay (minimal delay time for delivering data packets) is determined by -t deadline (time) for the first member having earliest delivery deadline of the sorted list of virtual data packets (see figs.2, 3, col.4 line 40 to col.5 line 65 and col.6 line 26 to col.7 line 55).

Response to Arguments

6. Applicant's arguments with respect to claims 1-28 have been considered but are moot in view of the new ground(s) of rejection.

Other prior art cited

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Chiussi et al., US pat. No.6,618,391.
- b. Chen et al., US pat.5,822,524.
- c. Narayana et al., US pat. No.6,577,635.
- d. Henrion et al., US pat. No.6,469,982.

Conclusion

- 8. Claims 1-28 are rejected.
- 9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Dinh whose telephone number is (703) 308-

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8528. The examiner can normally be reached on Monday through Friday from 8:00 A.m. to 5:00 P.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess, can be reached on (703) 305-4792. The fax phone number for this group is (703) 872-9306.

A shortened statutory period for reply is set to expire THREE months from the mailing date of this communication. Failure to response within the period for response will cause the application to become abandoned (35 U. S C . Sect. 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(A).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305 -9600.



Khanh Dinh
Patent Examiner
Art Unit 2151
4/30/2004